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ORIGINAL ARTICLE.

Ectopic Pregnancy.

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Read before the Kansas Medical Soctety, May, 1895.

The subject of ectopic pregnancy is one of deep interest not only to the specialist, but more particularly to the general practitioner, because in a great majority of cases he is the one who does or should first discover the displaced or abnormally located pregnancy. I use the term "ectopic" instead of "extra-uterine" because it is a broader and more comprehensive term, including as it does not only all extra-uterine pregnancies, but also that form of pregnancy which occasionally takes place in the walls of the uterus, in the ostium internum of the fallopian tube, or in that portion of the fallopian tube where it passes through the uterine walls.

There are five forms of ectopic pregnancies that we will study:

1. The interstitial, or those that take place in the ostium internum.

2. The abdominal, those that take plaee or are found in the abdomen.

3. The ovarian, or those that take place on the surface of the ovary.

4. The intra-ligamentous, those that are first discovered within the folds of the broad ligament.

5. The tubal pregnancies, or those that take place within the fallopian tube.

And I am strongly of the opinion that each one of the first four forms of pregnancy in a great majority of cases, if not all of them, belong originally to the fifth class or that of tubal pregnancy, and becomes one of the other forms at a subsequent date from rupture of the tube or from its escape from the fimbriated extremity of the fallopian tube.

The etiology of ectopic pregancy is still shrouded in doubt, but after examining a large number of cases and the prior history of these patients, I am led to the opinion that the true cause is a former salpingitis, which has either destroyed or impaired the integrity of the ciliated epithelium of the fallopian tube to that extent that the ovum is impeded in its passage through the tube, together with the impairment of the peristaltic action of the tube through the same inflammatory process; each of which is believed to aid in the transmission of the ovum from the ovary to the uterus; while upon the other hand there is no impediment to the entrance of the spermatozoa into or its passage through the fallopian tube, as it possesses an independent movement and power of locomotion of its own, as is well known.

At some point in the lumen of the fallopian tube these two germs coming in contact fecundation takes place, finding a suitable lodgement in the deeper or columnar epithelium, which is only a continuation from the mucous membrane of the uterine cavity, which is its normal habitat. In every case that I have seen, and in every one in which I have been able to obtain an intelligent history, there has invariably been a history of a former salpingitis of more or less severity; and this I believe accounts for the more frequent occurrence of ectopic gestation, viz,, the more frequent occurrence of salpingitis.

The early symptoms of ectopic gestation are even more varied and uncertain than

those of normal pregnancy, and every one of you know of the chagrin and disappointment that you have been obliged to contend with because of your inability to diagnose positively the existence or non-existence of a normal pregnancy. In ectopic pregnancy you have many if not all of the symptoms of normal pregnancy and about as uniform and constant in the one as in the other. The morning sickness, the cessation of menstruation, the changes in the breasts and areola, the form of the nipple, the changes in the genitalia and other well-known signs of normal pregnancy. But there are other signs upon which we must depend to complete or confirm our diagnosis of ectopic pregnancy and they are mostly objective. But first get a history of the case, especially as to former salpingitis, or of some pelvic or peritoneal trouble. Your patient will at an early period of her abnormal pregnancy complain of frequent, sharp, lancinating pains in the region of the new formation. These will vary greatly in character, severity and duration. There is apt to be marked tenderness over this region, and later on a fullness of that side. A digital examination will demonstrate a slightly enlarged uterus but not to be compared with one undergoing normal gestation at that period. Upon the affected side will be fullness in the tubal and ovarian region commensurate with the duration of the pregnancy. If it is in the upper part of the tube, or if it has escaped into the peritoneal cavity, it will be much less distinctly felt and recognized than if it has escaped downward into the broad ligament, when they can be early recognized and determined. A peculiarity of ectopic gestation is this: that while it is in progress outside of the uterine cavity a condition is taking place within the uterine cavity very similar to what takes place in normal pregnancy, viz., the uterus enlarges and the membranes of conception form, though perhaps imperfectly, and are usually thrown off before or about the third month, often with severe and continuous hemorrhage, and this condition is often mistaken for an early abortion both by the patient and the physician, the true condition not being recognized. If at about the beginning of the third month (which is the most usual time), or at any prior or subsequent period the tube bursts or the fœtal sac is ruptured into the peritoneal cavity, you will have another class of symptoms that will come on suddenly and be severe, and they will consist of a sharp pain and a more or less severe shock or collapse and the symptoms of internal hemorrhage. This latter class of cases demands prompt surgical interference both to arrest the hemorrhage and to relieve the peritoneal cavity of its foreign contents, and should be conducted like other laparotomies and under strictly aseptic precautions.

When an ectopic pregnancy has been diagnosed prior to its rupture, I believe that an early operation is the safest procedure. The destruction of the fœtus either by electricity or by the injection of morphia or chloroform or any other foreign body should not be recommended, as the operation is dangerous in itself and if successful in destroying the fœtus it leaves within the pelvic or peritoneal cavity a foreign body that may afterward give trouble and necessitate a subsequent operation. When the tube has ruptured through its lower border and the fœtus has escaped into or between the folds of the broad ligament the shock is less severe and the danger of hemorrhage is much less on account of the firm walls that produce sufficient pressure to prevent extensive and fatal hemorrhage, and it is this latter class of cases that may and often do go on to full term when they may be delivered by a laparotomy successfully to mother or child, and sometimes to both, but if not delivered the fœtus dies and gradually atrophies; but the vital powers are not sufficient to remove it entirely and consequently a foreign body is left within the pelvic cavity, a constant menace to life and health.

When we consider the constant danger to which our patient is exposed, no matter what may be the form or duration of the abnormal pregnancy I believe it to be our duty to recommend an early operation, as soon as the diagnosis has been made, as the safest and surest means of immediate and permanent relief.

Some Suggestions in Rectal Surgery.

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Professor of Surgery and Diseases of Rectum, Kentucky School of Medicine.

Read before the Niagara University Alumni, Buffalo, N. Y., May 16, 1895.

When the invitation came to me to read a paper before this Association, I must confess that there seemed to be no time at my disposal. But, having been in attendance at the American Medical Association last week in Baltimore, I extended my trip to the East in order to be with you to-night. I have thought, in selecting a subject for the occasion, that it was the proper thing for the shoemaker to stick to his last, so I propose to take some of your valuable time in discussing some points in rectal surgery.

Eighteen years ago I first conceived the idea, and after much hard work put it into execution, of making diseases of the rectum a specialty. At that time there was no specialty either in this country or in Europe. Since then some one or more distinguished surgeons in every large city of the Union have adopted the specialty. This, of course, is gratifying to me. I shall reserve the right in this paper to express an individual opinion upon all subjects touched upon, and in differing from others I mean no disrespect, and do not wish to appear either dogmatic or egotistical. I shall refer in the paper only to those points that are mooted.

Hemorrhoids.—Authors who have written specially on diseases of the rectum have divided hemorrhoids into two main classes: First, external; second, internal; and then have subdivided the classification into varieties of two external and three of internal. Of the first, a tag of skin or a thrombotic tumor go to make up this class. Of the second variety, such terms as arterial, venous and capillary are used to express them. Now, in truth, it makes very little difference with the operator whether piles are classed at all. For convenience sake it would be much better to say with Mr. Erichsen, "All external piles should be cut off, and all internal piles tied." In my opinion the universal advice given to let out the clot of a thrombotic pile, is non-surgical. After such an incision is made it takes the inflamed tissue which is left just as long to disappear by reabsorption as it would have taken nature to absorb the clot. In a word, then, all external piles should be cut off. A clean, even base is left, and the patient is well in one- half the time when compared to the other plan.

Internal Piles.—It matters very little with the operator whether internal piles are venous, arterial or capillary in nature. To diagnosticate such would not alter the operation in the least. Again, the classification is erroneous, for the reason that no hemorrhoid is made up exclusively of arteries, veins or capillaries. As to the method of ligating piles I object to the plan usually named as that of Mr. Allingham, but is the one proposed by Mr. Salmon, namely, that the cut should be in the sulcus, or white line, and carried down to the base of the pile, and after ligating, that but a small portion of the pile should be cut off. If superfluous skin exists around the anus, it is much better to include it all in the incision made and by the ligature used. If such mass is transfixed and tied tightly, it should be cut off in such a manner as to leave but a small base to slough. The idea that a contraction takes place after such an operation is chimerical, and even if it did, one dilatation with the speculum would overcome it. After operating upon over two thousand patients for piles, I have never encountered contraction but in two cases, and they were relieved in the manner described. I have said that all internal piles should be tied, because my experience has taught me that, compared with all other methods the ligature is the simplest of execution, freest of danger and most radical in its results.

Fistula in Ano.—This term does not in fact bear out the significance intended. Very few fistulæ in this region relate to the anus at all. Many of them communicate with the rectum, and some fistulæ in this neighborhood neither affect the anus nor rectum. A buttock may be extensively invaded, the perineum destroyed, or a sinus

run high up the back, when it will not be necessary to follow the time-honored injunction to push a director through the sinus into the rectum and divide all the tissues thereon, including the sphincter muscle or muscles. Indeed, such a procedure would be out of the question in many of these cases. From time immemorial anal fistulæ have been divided into three varieties, namely, external, internal and complete. Great stress is laid upon the importance of finding the internal opening of a fistula before operating. So far has this fallacy gone, that I have known surgeons to refuse to operate for fistula in ano because the internal opening could not be found. This is sheer nonsense.

After the main cut is made for fistula how easy it is to trace the channel to an internal opening, if one exists. I desire to say in this connection that no idea whatever can be conveyed to the surgeon by the appearance of the external opening of the fistula. Some of the most serious cases that I have ever operated upon were those having a small, insignificant opening. Many times a whole buttock will have to be sacrificed to effect a cure in such cases. The etiology has much to do with determining the method of operating, looking to its cure or eradication.

To classify the disease simply by physical signs, such as external, internal, and complete, gives but a faint idea of its nature; or to describe a fistula as a narrow channel, or sinus, lined with a socalled pyogenic membrane, is so far fetched as not to deserve recognition.

No membrane ever secreted pus, and yet this term pyogenic is still used by some writers. Again very few fistulæ are ever seen which are made up of a narrow channel or sinus. If such terms should be taken guides in estimating the amount of disease, or mapping out an operation, not one in fifty cases would ever be cured. A far better division of fistula in ano, in my opinion, would be, namely, progressive and non-progressive. Some fistulæ can be left without an operation for an indefinite time. Others are so distinctive and destructive in their nature as to require immediate attention. Instead of mere sinuses in the region of the rectum, well-formed cavities with a continued disposition to break down tissue will often be found.

Outside of the risk of sepsis in such cases, the local destruction may be so great as to render the individual a cripple or an invalid for life. It is a well-recognized fact that abscesses around the rectum, in a heavy per centage of cases, end in fistula, Many account for this fact by the statement that the circulation here is impeded by the absence of valves in this portion of the blood circulation.

But a factor of far greater importance is overlooked, namely, that the tissues being soft, fatty and often flabby, are unable to resist the inflammatory process. Besides, it must be remembered that certain diatheses, or cachexias, render these tissues peculiarly susceptible to the destructive process of inflammation. But even in healthy tissue the inroad from the inflammatory deposit is often such as to make an active and destructive condition that, unless heeded at once, ends in a serious complication of affairs.

With this idea in mind I would suggest some things which I think necessary in the successful treatment of this very trouble-affection. Speaking from a large and varied experience in surgery, I desire to say that it requires more delicate and precise operating to cure a complicated condition of fistula in ano than any other surgical affection of which I can think. In referring to the treatment of fistula I shall have nothing to say of the use of caustics, injections, ligatures, etc., proposed by some for the cure of this affection. They are, to say the least of them, unsurgical and unsatisfactory.

It is well known that there are comparatively few cases of fistula in ano that are limited to a single tract. Indeed, the most prominent thing that should be brought out in operating for this trouble, is the laying open of all communicating branches. This can only be done, of course, by the use of the knife. It is too common with the profession to think of fistula in ano as simply

an opening from the true skin down or into the bowel. The fact is that all adjacent parts of the rectum may be undermined or invaded by these fistulous channels. It can be easily understood, looking to the pathology of this affection, that no treatment can compare with the knife in dealing with it. By its use all sinuses can be divided, the bottom of fistulæ cut through, overhanging edges trimmed away, such precautions which are absolutely necessary to a cure in such cases. The old idea that fistula in ano acted as a derivative in tubercular affections of the lungs is of course obsolete and appears in a ridiculous light to-day. Therefore the early eradication of the trouble, even in tubercular subjects is much to be desired, and which can often be accomplished by an operation.

Ulceration of the Bowel.—I am constrained to believe, from my correspondence with physicians and the knowledge gained in consultation, that the opinion prevails that ulceration of rectum (benign) is of most frequent occurrence. I wish to go on record as saying that it is the most frequent of all rectal troubles. Indeed, in eighteen years of experience in this line I have not seen one-half dozen cases of ulceration of the rectum due to simple causes. This alone would force me to believe that the statement of writers that this trouble is a frequent occurrence is chimerical. Mucous membrane is very seldom the seat of ulceration, except it be of a special diathesis. So well pronounced are my views on this subject that I desire to state, without argument, whenever I see a well pronounced case of ulceration of the rectum I am at once convinced that it has its origin in one of three conditions, namely, syphilis, tuberculosis or malignancy. As I have put myself on record in my work on "Diseases of the Rectum," as saying that such causes of ulceration of the rectum as dysentery, pressure of the child's head, constipation, etc., are of the rarest occurrence, I would respectfully ask that the members of this Society call up any such cases in their minds and report them. So well persuaded am I that all such combined are insignificant as a cause of ulceration, that whenever I see an ulcer of a pronounced type in this portion of the gut, I know that it is of a much more serious origin than from any such causes as these. The three great factors, therefore, in my opinion, in producing ulceration of the rectum are tuberculosis, syphilis and cancer. With either one as a cause, ulceration is a very grave affair. If stricture of the rectum should result from any cause outside of these, it is easily remedied. It must be seen that such a stricture could only involve the mucous membrane, and would be annular in appearance. A simple dilatation would effect a cure. But a very different condition of affairs would result from either one or the other of the three mentioned causes. In other words, a stricture from pressure, trauma, dysentery, etc., would be a benign or simple stricture. Whereas, from the last mentioned, namely, tuberculosis, syphilis or cancer, the stricture would be secondary to a constitutional affection. We are too apt to look for a demonstration of tuberculosis in the lungs, possibly in a joint, when from a later study of the di ease it is recognized that the tubercle bacilli may have as a starting point any tissue or tissues of the body. Notably is this true of the rectum. My record book will show many cases where tuberculosis has attacked the rectum and left other tissues unaffected. In regard to syphilis as a cause of ulceration, with consequent stricture, I have before this given it as my opinion that fully 60 per cent. of such cases result from this cause. I only ask a careful compilation of your cases to verify this statement.

In this connection I wish to give it as my opinion that stricture of the rectum resulting from syphilis is just as incurable as cancer, the only difference being that cancer kills more speedily and that the sufferer from syphilitic stricture has a long lease on life. Strictures from cancer often exist without the manifestation of the pronounced symptoms that we usually expect. Indeed, there are many cases recorded from my practice where only constipation was complained of, with some reflex pain in contig-

uous organs. Of course this only holds good when the growth is located above the sphincter muscle and does not involve it.

Treatment.—Of course I can only suggest the manner or method of treatment of ulceration of the rectum, not having the time to enter into a full description of any plan. For a tuberculous ulceration there can be but one method to suggest. In the light of modern research it must be conceded that tubercular disease can have its origin or starting point in any tissue. The lungs may be secondary, in this trouble, to any other portion of the body. The surgeon meets with a tuberculous knee joint, he excises it; if with tuberculous bone, he removes it, not only for its local effect, but from the knowledge that a general infection can take place from such foci. Therefore if a tuberculous ulceration of the rectum exists, it must be thoroughly curetted. I am confident that I have prevented a general infection in a number of cases by a full and complete curettement of the rectum. Of the syphilitic rectum nothing so good can be said. Whatever may have been the opinion of pathologists a decade ago, it must be agreed today, if syphilis affects the rectum, it is by a secondary deposit. By a gummatous building-up process. This assumes a fibrous condition beyond the power of nature to reabsorb. We must therefore accept the ultimatum, and do the best we can. I believe that the landmarks are plain enough and the physical signs sufficient to draw the diagnostic line between strictures from this cause and the other causes I have mentioned. I might concede that, if syphilitic ulceration of the rectum was detected in its incipiency, that constitutional medication might effect some good. But not so with the condition of which we are speaking.

When a decided stricture exists it becomes a matter for surgical interference. What shall it be? I am familiar with the fact that some writers deal with all serious ulcerations or strictures of the rectum in one of two ways—surgically, total excision or colotomy. I am averse to both. If syphilis has affected the lower rectum and results in stricture, it certainly appears advisable to divide or break the stricture and avoid the opening in the side. Especially is this true when we recognize that the process of infiltration is more or less self-limited, and we have nothing to fear in the extension of the disease except the obstruction. A free proctotomy in such cases is much better than a colotomy. If a stricture, the result of syphilis, exists in the movable or the upper rectum, I believe that it is an ideal case for a colotomy. It is a localized condition without the power of extension; nature cannot reabsorb it, and obstruction results, which to all intents and purposes is purely mechanical. If it is dangerous to dilate, an opening can be made obove and the patient live indefinitely. How different from a cancerous stricture! The destructive process goes on, ends in death, regardless of the colotomy. In cancer of the rectum, or cancerous stricture, the two methods mentioned, namely, total extirpation or a colotomy is resorted to. First, let us consider the propriety of total excision. With so many to recommend it, I feel some diffidence in entering my protest against it. Mr. Kraske has designed a most excellent operation for the removal of the rectum. But I would beg to ask, When is the operation justifiable? There are two propositions that I would submit for argument in reasoning against this operation. First, is the patient ever cured of the trouble operated for by said operation? Second, Is the patient ever materially benefited or relieved by the operation? I beg to take the negative to both propositions. First, I take it for granted that the only cause for which it could be said that total extirpation could be advised is malignancy. I use the term synonymous with cancer. We note, then, the characteristic features of malignancy as follows: The disposition to grow, to ulcerate, to infiltrate and to propagate. It is an aphorism well known in surgery in cases of cancer, to "operate early if you desire success." All teachers, too, know how assiduously they teach the student to do a thorough operation and "cut wide of the mark" whenever dealing with this character of tumor. For instance, when removing malignant growths

of the breast, how important it is, we say, to remove the glands in the axilla also. Again, how insidiously does a cancer invade the system and establish a cachexia. How difficult to tell the dividing line between a local condition and a general infection! Add to this the suspicion always that the tumor has likely propagated. These questions are difficult of solution, even when the growth is situated upon the external parts. How much more difficult when located in an obscure part of the anatomy, as in the rectum. Cancers found here are so stealthy in their growth and in the invasion of tissue, that oftentimes the whole rectum is blocked by the mass when only symptoms of constipation and some reflex pain are complained of. Tissues surrounding this portion of the gut are soft and easy of invasion, the blood circulation is great, the lymphatics are freely distributed. The contiguous parts are vital ones, the bladder, peritoneum, the prostate gland and the vagina in the female are all easy of invasion. By the time that a growth in the rectum has assumed sufficient proportions to be diagnosticated as cancer, many of these parts are already invaded by the process of infiltration. To dissect and draw down the rectum in the normal state may be comparatively an easy matter, but to completely dissect out a rectum that is so pathologically changed, as in a cancerous growth, is nearly an impossibility. Besides the difficulty of accomplishing its free dissection, it is one of the bloodiest operations that I have ever attempted. Admit that it can be successfully done, what amount of good accrues to the patient? Infiltration is clearly proved by the amount of adhesion that is witnessed. Can we now "cut wide of the mark?" I believe that every surgeon present will concur in the opinion that, to make the operation complete, all glands in the inguinal region should be removed. But what about the infiltrated tissue left in and around the rectum? Then, of what use is the operation? A bloody procedure, rectum gone and infiltrated tissue left. Would any sensible surgeon dissect out a cancer in the breast and cover the wound with infiltrated flaps? Why, then, should a surgeon dissect out a cancer of the rectum and leave infiltrated tissue? If a growth of the kind is situated in the lower part of the rectum, of course it can and should be excised, for we take the precaution here to "cut wide of the mark." It may be said that after excision the patient lives for several years.(?)

I shall not take your time to enter into an argument pro or con concerning colotomy for the relief of cancer of the rectum, but will make it suffice to offer a few suggestions for your consideration. It must be a well-recognized fact that in the majority of cancers of the rectum located above the sphincter muscle pain is not a factor. It must also be admitted that, as a rule, these patients do not suffer from obstipation to any marked degree. Why, then, do a colotomy for the relief of pain that does not exist, or for an obstruction that oftentimes does not take place? No one will contend that by doing a colotomy that cancer of the rectum is either cured, or its progress materially stayed. If an obstruction does exist, and is within reach of the finger, it is much better to do a proctotomy than to open the side. It is a disgusting operation at best, promising very little, and should be avoided if possible.

DR. S. G. STEWART has promised to prepare a paper on malaria for the next meeting of the Academy of Medicine and Surgery. A carefully prepared paper on this subject, presenting the results of recent experiments will be of much interest and provide considerable discussion.

CHOLERA is again in the wind, but no doubt if the Kansas State Board of Health attempts any preventive measures they will need a steel armor to protect them from newspaper criticism.

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Topeka, Kansas, Saturday, Sept. 21, 1895.

A Success.

The first day of this session of the Kansas Medical College has demonstrated the success of the early adoption of the four-year course. A large number of new students were enrolled, and more are expected. Most of the colleges interpreted the action of the association to mean that students who entered this year should be graduated in three years. Their early adoption of a three-year course at a time when all Western colleges still adhered to the two-year plan and the marked success attending this course, perhaps influenced the Kansas Medical College in their early adoption of a four-year course.

It seemed at first that the fact that the schools of Kansas City, St. Joseph and St. Louis only required three years would greatly handicap them for this year at least, but the examining boards of some of the States, it would seem, have not been in sympathy with the opposition and will refuse diplomas from schools which have not this year adopted the four-year course. This action and the desire of students to obtain a diploma which will be recognized in every State has doubtless had a very favorable influence in bringing students to Topeka. We feel that the profession of this State should be proud of a school which in spite of disadvantages and opposition has so persistently maintained a high standard.

Medical Books.

There is at the present time a paucity of recent good medical books. The number of works issued during the past few years which can be classed as reliable and standard are very few, and there have been also but few revisions. Some of the so-called revisions are but hasty corrections of some of the principal points in order that the book may be hastily marketed. The inauguration of the system or encyclopœdic style of literature has discouraged the sale of the better class of literature, and has also prevented any attempt at careful, systematic literary work by our best authors. It is a lamentable fact that there is really no textbook on the practice of medicine which can at the present time be called scientific and up to date. Our textbooks on materia medica and therapeutics are sadly in need of careful revision. In fact we may almost say that the medical library of today is so far behind that the practitioner must depend almost entirely upon journal literature if he keep in the front rank. Medical publishers are greatly to blame. A few years ago there was introduced upon the market a system of medicine which was intended to cover every department of the science. In fact, it was a complete library in itself. The price was rather high, but as it was sold on monthly payments, a great many of

them were disposed of; in fact, the majority of practitioners soon became reference handbook practitioners. It was authority for everything. Having the reference handbook what need to buy other books?

Other systems followed and are still following. The plan upon which these systems are prepared we do not question, but the effect upon the profession is not what it was intended it should be. The physician who would be a successful practitioner and a learned man needs more than a reference book; he wants facts, complete and comprehensive, and when investigating a subject he wants to take his facts from the beginning and to the end. The idea of facilitating hasty reference to any subject discourages thoroughness; it tends to superficial knowledge and incomplete understanding: But the man who depends upon cyclopedic knowledge is no better informed than he who reads only one author or one text book. He may know a little of a great many things, but he knows nothing well. A broad-minded, careful reader and thinker does not become confused because he reads a great diversity of opinions on any subject. He notes the facts considers the suggestions, and draws his own conclusions.

Books are authorities only for the facts stated; the opinions are only suggestions to the thinking mind, and may be accepted or jected. Encyclopedias of medicine, as soon as they are out of date are practically worthless. Text-books, on the other hand, if they possess any real merit, no matter how old they become are of value.

Watson's "Practice of Medicine," though long out of date, is a valuable addition to any medical library; so with Stokes' treatise on diseases of the heart. These were standard works, and though much they contained has been superseded by more recent investigations, there were facts presented, there were accurate descriptions of disease conditions which have made them invaluable to the reader who was familiar with them. The collaborators of an encyclopedia or system of medicine lose their identity in the maze of authors and variety of subjects presented. A book represents the author, expresses his opinions, and if truly of merit becomes a monument to his memory.

As THE great Chicago sewage canal progresses people along the Mississippi are becoming alive to the dangers that threaten them. Chicago is certainly very unfortunate in its natural drainage facilities, but it does not seem just that the health of other cities of the same and other States should be sacrificed for its relief. There are several questions that could be asked here: first, Will this canal when complete assure a perfect sewerage system? second, Could not, for the same cost, the city of Chicago have perfected as good if not a better plan for disposing of their sewage? Cities of the old world have a variety of sewer systems that are in the main superior to any in this country. Where it is impossible or inconvenient to find a good water outlet other plans have been found not only to be as successful, but in many instances considerably cheaper. With proper encouragements the sewage from large cities can and has been converted into fertilizers which can be disposed of at good prices and often yield a profit to the city. The serious question to be considered in connection with the Chicago canal is the danger to other cities. It is claimed that there will be complete oxidation of all organic matter before it reaches any of the threatened cities. The interest that has been awakened in the American health Association and in the local sanitary boards would indicate that they had considerable doubt of the purifying effect of the air and current.

The Beneficent Microbe.

Journal of American Medical Association.

In his presidential address before the British Medical Association Dr. Russell Reynolds calls attention to the "gradually increasing appreciation of the fact" that the lower forms of life that we include under the general head of microbes, and to

which it is the popular fashion nowadays to refer all manner of disease, are not altogether mischievous in the influences they exert on the human economy, but are, on the contrary, often beneficial. Though this is no new medical view, its statement under such circumstances by so high an authority at this time has a certain significance. It is a recognition of a truth that is becoming more and more evident, that we only know as yet a small part of the beneficent functions of these bodies and that even the maleficent ones may have their uses to mankind. Dr. Reynolds goes at some length into the subject of immunization as indicating this utility, and alludes to the long-known facts that bacteria are useful and probably essential in many of the healthy processes taking place in the human body. It has been taken for granted as a fact in physiology that they have their part in digestion, and it seems to be established that they are under certain conditions essential in the life of some higher vegetable types, and in other instances, and in the case of the normal vaginal bacillus, they seem to exercise a directly protective influence. These facts are known to medical men, but in these days of popular "microbe killers" and with the general tendency of the public to absorb a little medical knowledge to its own hurt, a little reiteration and consideration of them may not be altogether a bad thing.

Even the pathogenic bacteria may have their uses in causing a constant and general immunizing process in human populations. Probably, with less frequency of these occurrences and a general distribution they would be far more virulent when they did attack the system—the fatality of measles and other comparatively harmless infections of civilization among savages, the extra virulence of new epidemics and the occasionally observed proportional mildness of the same disease after it has become common, quite apart from the selective process that might be assumed were the disorders always self-protective or fatal, all point in this direction. While, therefore, there are many of these organisms which mankind could well dispense with were that possible in any absolute sense, it may be that we are gradually getting better off as regards their influence by their very frequency. Pathologic familiarity may breed a physiologic contempt.

These are only suggestions, and may not be necessarily accepted, but they are permissible ones in the present state of our knowledge, which is still largely in the suggestive phase.

The Mad-Stone.

Medical Brief.

We have been requested to give a short exposition of the virtues of the mad-stone. Its use is as old as history. There is nothing of the miraculous in its action, which is based upon a very tangible, matter-of-fact property. It is exceedingly porous, has a great attraction for water and is, therefore, capable of absorbing largely. Placed upon a bleeding wound the attraction exercised by the water for the blood makes them one for the time being. When the stone becomes saturated it naturally falls off. The mad-stone does not impart any mysterious virtues to the individual. It would be quite as efficacious to have the victim vigorously suck the wound, ejecting the saliva.

The writer must confess to much skepticism concerning the existence of the disease, hydrophobia. Many people have been bitten by dogs at some period of their existence, and should they ever, in the future, develop a spasmodic disease, characterized by inability to swallow fluids (it is much more difficult to swallow liquids than solids) it is promptly pronounced hydrophobia.

A dog has no specialized secretion, elaborated and stored away for its protection, as has the serpent.

A mad dog is one which, through deprivation or ill treatment, has lost mental balance. He is insane, epileptic, and is apt to do bodily injury to those with whom he comes in contact, just as a man under similar conditions might.

It is probable that none of the secretions are strictly normal in the mentally deranged; but if the saliva contained a poison

sufficiently virulent to create the profound disturbance seen in so-called hydrophobia, it would not require a year or even a month to get in its work. In cases of snake bite, treatment must be prompt and energetic to save the patient.

There is a great deal of fraud and mystery surrounding this subject of the mad-stone and the disease in which it is used. Beyond the simple physical property mentioned, the mad-stone exercises absolutely no influence; but the disease has, of late years, been made the basis of a most stupendous error, the Pasteur treatment. Since the adoption of this method in Paris, cases of hydrophobia have multiplied, due, we firmly believe, to agitation of the subject. Given a neurotic person bitten by a mad dog and a few weeks or months of incessant brooding, according to the degree of mental stability, and we are pretty sure to have a case of hydrophobia.

Death is the rule in this disease, notwithstanding the much-vaunted Pasteur treatment.

Serum Treatment of Carcinoma.

British Medical Journal.

Emmerich and Scholl (*Deut. Med. Woch.*, April 25, 1895) relate their clinical experience of the treatment of carcinoma with erysipelas serum. They first refer to Coley's researches into the treatment of inoperable tumors, both carcinoma and sarcoma, with bouillon cultures of the erysipelas coccus inoculated with bacillus prodigiosus. In addition to the favorable results obtained by Coley, there were some unpleasant by-effects. The authors inoculate sheep with erysipelas cultures and free the blood serum from micro-organisms by filtration. They have treated a number of cases of carcinoma (and sarcoma) with this serum during the past half year. In only two cases were there no results, and here there was secondary infection with suppurative changes in the carcinoma. Details are then given of six mostly advanced and quite hopeless cases; four of these were examples of recurrent mammary carcinoma, and a sixth of long-standing cancroid.

1. A recurrent mass was present in the scar as well as carcinomatous glands in the axilla, and the whole of the infraclavular space was infiltrated with growth. The masses in the scar and axilla disappeared under the treatment, and the improvement was such that the patient could move her arm.

2. The hard masses about the scar disappeared, but a larger mass did not become less before the treatment had to be unavoidably suspended.

3. There was an ulcerating mammary carcinoma with metastases. Several of the masses became less and the general condition of the patient greatly improved.

4. A metastasis in the upper arm disappeared in another case.

5. A large and rapidly growing mass of carcinoma in the breast and axillary glands rapidly became less. The mass in the axilla diminished to half its original size in fourteen days.

6. Great diminution in size occurred in a cancroid in the face. The author thinks that the action of the serum is efficient and specific; it is probably even more efficient in sarcoma than in carcinoma. It cannot yet be decided whether it acts on all forms of carcinoma. The younger the carcinoma the better the results, but older carcinomata soften and become absorbed.

The amount of the injection must depend on the size of the growth and the condition of the patient: 1 to 4 cubic centimetres of the serum injected daily into the growth suffices for small tumors; 10, 15, 20, or 25 cubtc centimetres may be injected into a large tumor.

□ THE Eastern Kansas Medical society will meet in Topeka October 8. It is intended to make this essentially a general practitioners meeting. Several papers have been promised and a good attendance is expected. There is no reason why this meeting cannot be made a very interesting one.

How To Make Iodoform Gauze.

Therapeutic Gazette.

At the request of a number of gentlemen who have attended his clinics, Pryor publishes in the *New York Medical Journal* the following formula for making a surgical dressing impregnated with iodoform:

Fine mesh gauze is steam-sterilized. It is then dried. After drying the gauze is soaked in a twenty per cent. solution of iodoform in ether for ten minutes. It is then taken out and the excess of ether wrung out with the hands. The gauze is now placed in a basin and covered with a towel. It is left for twelve hours in a warm room, after which time it will be found that the ether has entirely evaporated. The gauze is now of a greenish-blue color, presenting the characteristic starch-iodine reaction. It is unfit for use in this state, the iodine being too free.

The next step is to soak the gauze for 12 hours in a watery solution of bichloride of mercury (1 to 4000). This acts as a "fixing agent," and the beautiful golden color of iodoform again appears. The gauze is now wrung as dry as the hands can make it and preserved in glass jars. Prepared in this way, the iodoform is not held in the gauze in mere mechanical association, but is in every bast-cell of the fiber (cotton) of which the gauze is composed. The advantage of this is manifest: such a dressing cannot be poisonous, as the iodoform is not absorbed. The addition of discharges and blood to the gauze again turns it greenish-blue, showing that the iodine is again in a free state. So, when the dressings are saturated they are yet sterile. In cavity walls, there being no glycerin in the gauze, no serous exudation is induced. This material has been used by the writer for five years or more, and has largely influenced, in his opinion, the results as well as after-treatment of his operations. He estimates that he makes one dressing where three are made when other gauzes are used.

For instance, he leaves a Mikulicz packing in the abdomen for two weeks, and when it is removed there is no pus and no rise of temperature while it remains.

In one case where he did a successful hysterectomy for puerperal septicæmia, the last piece of gauze was not removed before the tenth day. In curettage for gonorrheal and septic endometritis the gauze stays in for five or more days.

In his method of operating for ventral hernia the first dressing is made in from ten to fourteen days.

Ablations of the uterus are not dressed before the tenth or twelfth day.

This is the only dressing he has ever found which is powerfully antiseptic, is non-irritant to the tissues, and remains sterile when soaked with discharges from an infected area.

It is, perhaps, well to mention that the dressing is prepared under an aseptic procedure as precise as that employed at an operation.

As to quantity that may be used: five yards long, one yard wide, in a puerperal uterus; sixteen yards long, four inches wide, in an obliteration of the pelvic cavity; nine yards long, four inches wide, after a sacral resection; and in no instance has there been the least evidence of iodoform intoxication.

So far as the chemistry of the procedure is concerned it is as follows: when the gauze is green after the ether has evaporated, there is iodide of starch and there is free iodine; when the bichloride has been added there is bichloride in the starch and there is iodoform; when the bichloride is changed to calomel by blood, etc., the iodine again becomes free and the dressing is again greenish-blue. The writer has been told that the above is true with reference to the chemistry, but cannot say whether the result is the same within the body. Certainly marvellous results are obtained with it.

DIPHTHERIA is gradually increasing in Topeka. About half the people drink well water and use closets which have no sewer connection.

Tobacco and Religion.

Medical Record.

It is somewhat startling to learn that peace has been in a measure declared between tobacco and religion, and the former, that has been so often declared to be the ally of the evil one, is about to join forces with Christianity in its laudable effort to evangelize the world. Not very long ago, at a ministerial conference, it was voted that no minister of the gospel could consistently preach with a socalled tobacco breath, as it was impossible under such circumstances to maintain that odor of sanctity and earnestness of persuasion necessary for successful spiritual ministrations. We believe one good brother rather forcibly alluded to the impossibility of drinking pure water from a foul cup or mug. Although no originality was claimed for the allusion, it had the telling effect of securing the passage of a resolution forbidding the parson from smoking or chewing the socalled noxious weed. It is fair to say that the cause of the smokers and chewers was not lost without a struggle. Many, however, knowing the impossibility of sincere and effectual repentance of the habit, sought relief in that usual mental reservation of possible wickedness in private as contrasted with the plausible virtue in public. In fact, one of the committee, in copying the resolutions in a side room, was charged with actually smoking while so engaged. It was maintained on that occasion that no man with a quid in his teeth could properly round his periods or decorously control labial reflexes with a mouthful of redundant saliva. Certainly no man caught in the act could pose as a shining example of ordinary Christian self-denial.

Now, however, it would appear that the tobacco aspect has entirely changed front. We notice a report to the effect that in one of the London churches there has been established what is called a smoking service, in which the habit is not only tolerated but actually encouraged by an extra offer of free tobacco. This innovation will doubtless act as a powerful temptation to many outsiders, and may, we trust, tend to overcome any scruples as to waste of time in listening to prosy sermons, while at the same time the smokers themselves may become more benevolently receptive to those better influences that associate themselves so directly with the other forms of church service. The smoker, with his pipe well aglow, is generally prepared to look on the reasonable and happy side of any question. Many an after-dinner speaker is saved from well-merited condemnation for prosiness by the benevolent tolerance of a crowd of smokers. Tobacco, under the circumstances, tones down antagonism, paralyzes criticism and invites conviction. Thus the tobacco service is likely to be a success in every way, provided the tobacco itself is of good quality and the smoking service of satisfactory length to the old stagers.

Massage of the Eye.

The Medical Week.

Dr. Parenteau, of Paris, holds that massage of the eye and its appendages constitute a method of treatment which is worthy of being tried and applied in a large number of affections.

Maneuvers forcible enough to determine traumatism may be beneficial in lesions of the eyelids, such as cysts, chalazion, engorgements, and the like.

In ocular affections, properly so-called, he regards them as too dangerous.

Massage with medicinal substances possesses the double advantage of assisting the penetration into the eye of the ointments or powders introduced under or applied to the surface of the lids, and of bringing about a quicker subsidence of the congestion of the eye and its envelopes. It is especially indicated in phlyctenular kerato-conjunctivitis, corneal leucomata, iritis, episcleritis and irido-choroiditis.

Simple massage, executed with the aid of the fingers or special instruments, without the addition of drugs, is called for whenever there is a muscular lesion of peripheral

origin, or vascular disturbance. Massage is contra-indicated in progressive myopia of high degree, considerable hypotonus and incipient opacity of the crystalline lens.

The modus operandi varies from slight touch to strong pressure, and includes also percussion of the tendons, in affections involving the muscles of the eye. The motion should be radial and circular in corneal or iridal lesions, longitudinal in muscular lesions and vertical in episcleritis and iridochoroiditis.

Alkalinity of the Blood and Microbic Affection.

British Medical Journal.

Josef v. Fodor records a number of experiments showing the influence of the alkalinity of the blood on diseases produced by micro-organisms. Four series of experiments on animals are first reported, which show clearly that, by the administration of alkalies (sodium bicarbonate by the mouth or by subcutaneous injection), the power of resistance against infection with cultures of anthrax bacilli is greatly increased. The normal alkalinity of the blood was determined by the examination of seventy-six healthy rabbits, and four experiments are reported showing the increase in the alkalinity of the blood which occurs after the administration of sodium bicarbonate. The author then records the results of a large number of observations on the alkalinity of the blood in rabbits after infection with the bacilli of anthrax, cholera, typhoid fever, tuberculosis and erysipelas. These observations show that in the living organism, after infection with certain bacilli, there is first an increase of the alkalinity of the blood and then a diminution of the same, more or less. If the infection is fatal, the diminution of the alkalinity is marked and progressive; if not fatal, the diminution is slight, and is followed by an increase of the same, in consequence of which the alkalinity of the blood becomes permanently higher than before the infection. Thus there exists a connection between the pathological action of certain bacteria and the alkalinity of the blood. Those rabbits having the greater alkalinity of blood, as well as those in which the alkalinity of the blood is increased to a greater extent after infection, have greater power of resistance against certain infectious organisms (anthrax bacilli) than the rabbits in which the alkalinity of the blood is less. It appears, therefore, that the degree of alkalinity of the blood, as well as the power of the organism to increase this alkalinity with corresponding intensity after infection, is of essential influence upon humanity.

Treatment of Local Tuberculosis by Pure Iodine.

Medical Chronicle.

Guermonprez (*Gaz. des Hospitaux*, June 25, 1895) says the caustic action of iodine is limited and prolonged when the metalloid is introduced in the powdered form into a tubercular focus, and it is still more prolonged when the sublimed crystals are put in, even to completely fill the cavity.

Iodine seems to have an elective action on tuberculous tissues. It acts deeply, and is painless when applied to tubercular nodules, but it is painful and merely superficial in its action when applied to healthy tissue. The eschar formed by pure iodine in a tubercular focus is thrown off spontaneously, four to eight days after the introduction of the caustic. This eschar has a cylindroid form, is of firm consistence, its centre is formed of excess of iodine, its surface is covered with little whitish viscous mucin-like liquid, which renders its elimination easy, rapid and painless. The surface is red, firm, and not very sensitive to the touch when the tuberculous elements are no longer present. In the other case the exposed surface is gray, soft, and more or less sensitive to pressure; this is then an indication to make a fresh application without delay. Eight or ten successive applications usually suffice for cure, provided the cavity is carefully packed to the bottom.

Applications of iodine in this manner to tubercular foci do not seem to occasion any manifestations of iodism. They may be used in young children as well as adults, and also in syphilitics. They may be continued till complete cure results in tubercular deposits or ulcers on the limbs, in tubercular orchitis, tubercular osteitis, and especially in cases of adenitis.

It is advisable not to wait for spontaneous ulceration, but open with a bistoury or with the thermo-cautery, and then to apply the iodine directly to the tubercular material.